

# Ultimate2000

## User's Guide

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### **Federal Communications Radio Frequency Interference Statement.**

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, Pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential installation. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio of television reception, which can be determined by turning the equipment off or on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio TV technician for help.

Notice :

- (1) The changes or modifications not expressly approved by the party responsible for compliance could void the user authority to operate the equipment.
- (2) Shielded interface cables and AC power adapter, if any must be used in order to comply with the emission limits.

### **CE DECLARATION**

This device complies with CE class B.

*EN50081-2	*EN50082-1
EN55011	IEC 801-2
EN61000-3-2	IEC 801-3
EN61000-3-3	IEC 801-4

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# CHAPTER 1

## *Welcome to Grand Ultimate 2000*

### 1.1 Introduction

Grand Ultimate 2000 is a pocket-size universal VGA to TV converter box. It supports resolutions up to 1024x768. It is best for choice for PC gaming, DVD movies, Entertainment, Education and Presentations.

### 1.2 Product Features

1. Pure hardware design with simple **Plug & Display** installation. No software driver is required and it is compatible with any operation system
2. Switchable NTSC (United States), NTSC-EIAJ (for Japan), PAL, PAL-M, PAL-N, PAL-combination-N and SECAM (via RGB OUT) video systems
3. Supports [640x480@60/72/75/85Hz](#), [800x600@56/60/72/75Hz](#), [1024x768@60Hz](#) display modes
4. Supports composite VIDEO, S-VIDEO or RGB (or YUV component) outputs
5. Supports **Screen Position control** and **ZOOM** function
6. Supports **SIZE** (overscan/underscan) function on 640x480 mode
7. Power conservation by VESA DPMS method, compatible with VGA Monitor power saving
8. Simultaneous display on VGA monitor and TV
9. True 24 bit A/D converter for the true 16.7 million color conversion
10. Power from Keyboard port
11. Compact form factor: 95mm(L)x55mm(W)x30mm(H)

### 1.3 Application:

1. Entertainment – play VCD and DVD movies on TV. Experience PC games on TV.
2. Presentations – Ideal for both classrooms and conference rooms.
3. Documentation – Capture PC images on video tape.
4. Training – Easy software training via video tape.

### 1.4 Mode and Resolution Table

The Grand Ultimate 2000 supports the following VGA display modes:

Resolution	640 x 480	640 x 480	640 x 480	640 x 480	800 x 600	800 x 600	800 x 600	800 x 600	1024 x 768
Horizontal Frequency (KHz)	31.5	37.9	37.5	43.3	35.2	37.9	48	47.2	48.4
Vertical Frequency( Hz)	60	72	75	85	56	60	72	75	60

The Grand Ultimate 2000 supports the following MAC display modes:

Resolution	512x384	640x480	640x480
Horizontal Frequency (KHz)	31	35	53.7
Vertical frequency (Hz)	70	66	85

## 1.5 System Requirements

- Desktop or Notebook PC compatible with PS/2 or AT keyboard port and VGA output.
- TV or VCR that supports NTSC or PAL video standards with composite video input, S-Video input, RGB video input *or* SCART input connector.

## 1.6 Package Contents

This package contains the following items:

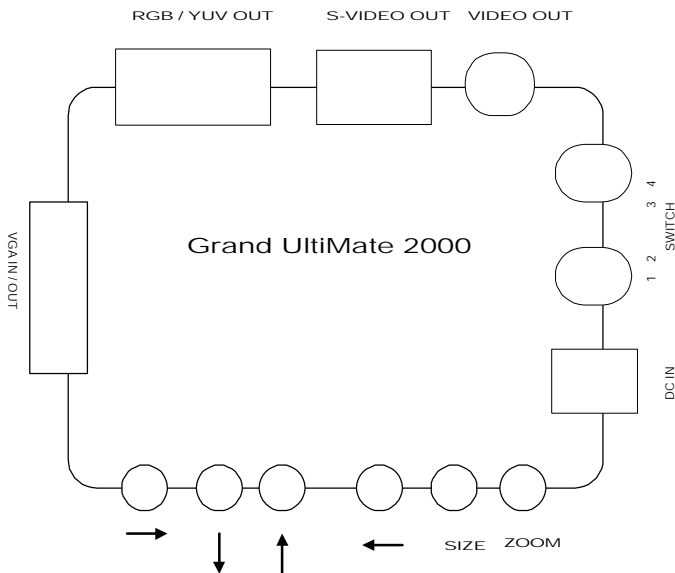
1. Grand Ultimate 2000 VGA to TV converter
2. User's Manual
3. S-VIDEO cable
4. VIDEO cable
5. Power cable (DIN and MINI-DIN type)
6. Y cable for IBM PC
7. RGB to SCART cable (for European version only)

## CHAPTER 2

### *Installing the Grand Ultimate 2000*

The following section shows the functions of the **Grand Ultimate 2000**. Refer to **Figure 1** for the outline of Grand Ultimate 2000.

**IMPORTANT! Turn your computer OFF before connecting the Grand Ultimate 2000.**



**Figure.1 Outline of Grand Ultimate 2000**

## 2.1 Connectors of Grand Ultimate 2000

- **VGA IN/OUT (MAC)** : VGA Input and output connector. The Y cable labeled with **SCAN CNVTR** connects to this side.
- **S-VIDEO OUT** : Connects to your TV supporting the S-VIDEO input.
- **VIDEO OUT** : Connects to the VIDEO IN of TV.
- **RGB/YUV OUT** : Connects to your display device supporting the European SCART standard with RGB to SCART cable, or other display device with RGB input. If the RGB/YUV OUT is enabled, the S-VIDEO OUT and VIDEO OUT do not function simultaneously.
- **DC IN** : Connects power cable to keyboard port.

**NOTE: Do NOT plug in the keyboard power cable while the computer is on!**

## 2.2 Buttons and Switches of Grand Ultimate 2000

- **TV system switch**

Selects the desired video standard output.

**NOTE:** *In the United States, switch 1,2 and three should be ON and switch four should be OFF.*

Television Standard	Switch		Switch	
	1	2	3	4
NTSC (USA)	ON	ON	ON	OFF
NTSC-EIA	OFF	ON	ON	OFF
PAL-M	ON	OFF	ON	OFF
PAL-N	ON	ON	OFF	OFF
PAL-B/D/G/H/I	OFF	ON	OFF	OFF
PAL-Combination N	OFF	OFF	OFF	OFF
RGB OUT enable				ON

- **SIZE button**

Switch between **UNDERSCAN** and **OVERSCAN**. This function is available on 640x480 mode only. Pressing this button also RESETS the display to default position.

- **ZOOM button**

Toggles between **ZOOM** and **NORMAL** display.

- **POSITION button**

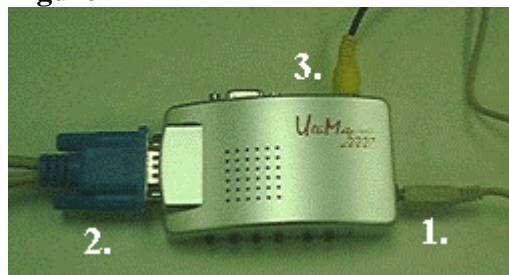
Press up, down, left and right buttons and the picture will move in the direction pressed.



## 2.3 Installation

**IMPORTANT! Turn your computer OFF before connecting the Ultimate2000!**

**Figure A**



**A1. Connect the Keyboard Power Adapter into the DC IN of the Ultimate2000. This cable powers the unit and is required instead of having to plug the unit into the wall.**



**A2. Connect the end of the VGA Y-cable labeled SCAN CNVTR into the VGA IN/OUT port as shown.**



**A3. Connect either the yellow-tipped RCA composite video OR the solid black S-video cable (recommended) into the video out port on the Ultimate2000.**



**Figure B**



***NOTE: Do NOT plug in the keyboard power cable while the computer is on!***

**B1. Connect the Keyboard Power Adapter (there are two different types included - use the type that fits into your keyboard port) to the keyboard port of your computer or the mouse port of the your laptop. If you do not have a keyboard port, you will need to purchase an external power supply. See information regarding EXTERNAL POWER SUPPLY in the trouble-shooting section of this guide.**

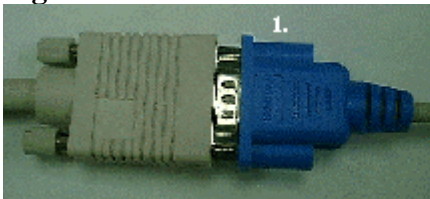
***NOTE: Laptop users connect the keyboard power adapter to the keyboard/mouse port.***

**B2. Connect the keyboard into the back of the keyboard power adapter if you require an external keyboard.**

*Note: Laptop users may not require this step B2.*

**B3. Connect the end of the VGA Y-cable labeled PC to the monitor (or VGA port) on the desktop or laptop.**

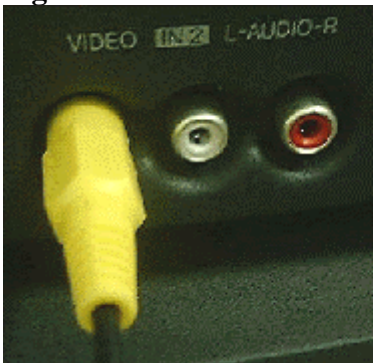
**Figure C**



**C1. Connect a VGA monitor to the end of the VGA Y-cable labeled MONITOR. This step is optional.**

*Note: Laptop users may not require step C1.*

**Figure D**



**D1. Connect either the yellow-tipped RCA composite video OR the solid black S-video cable (recommended) into the video in port on your television.**

*Note: Grand Ultimate 2000 also supports high quality S-VIDEO. If your TV or VCR supports S-VIDEO IN, we highly recommend you use it to get the best TV picture.*

**D2. Toggle the display input to correspond with the video input you are using. For instance, a TV defaults to the antenna or cable input when it is turned on. You will see either a TV channel or snow. Using the remote control toggle the input to display the VIDEO rather than the antenna/cable. Each TV varies slightly, so you may need to refer to your TV's user's manual for further assistance.**

**D3. If your TV does not have a VIDEO input, you may connect through a VCR's VIDEO IN. Note: Since virtually every VCR is different, please refer to your VCR User's Manual for exact instructions for recording an external video source.**

**To connect a Grand Vision converter to a VCR for recording, follow these steps:**

- 1. Using either the RCA or the S-video (recommended) cable, connect from the video out on the Grand Vision converter to the Video IN on the VCR**
- 2. Using either an RCA or a 75 Ohm coaxial cable connect from the Video OUT on the VCR to the Video IN on the TV**
- 3. Set the TV/VCR switch on the VCR to "VCR"**
- 4. Set the TV to display the video input signal (Refer to TV's User's manual for instruction on displaying an external video source)**
- 5. You should be able to see the converted computer display on the TV**
- 6. Insert a blank tape into the VCR and press "RECORD". Stop the tape after a few moments to test that it is recording.**

# CHAPTER 3

## *Technical Tips*

The following are problems that might arise when using the PC to TV converter, and possible solutions to them.

### **Things to Check :**

1. VGA-Y cable is backwards: Check the ends of the Y-cable and confirm that the end labeled "PC" is plugged into your computer, the end labeled "SCAN CNVRTR" is plugged into the Ultimate2000, and the end labeled "MONITOR" is either connected to a monitor (on a desktop) or not connected to anything (laptop).
2. Keyboard power adapter is not plugged in: With the computer OFF, connect the keyboard power adapter into the keyboard port of the laptop or desktop. Plugging in the adapter is effectively the same as plugging the Ultimate2000 into the wall.
3. The input on the display (TV, projector, etc.) is not properly set. If your display has multiple video inputs, then you have to toggle the inputs to display the one you need. Typically this is done via the remote.
4. The TV looks fine during boot-up but once the PC enters Windows all I see is black and white horizontal wavy lines: The display adapter (video card) is set to a refresh rate not supported by the Ultimate2000.

The following procedure is required on most typical systems (Note: your PC may require a different procedure. Please refer to your PC's documentation for how to adjust the refresh rate for further information):

Start Menu -> Settings -> Control Panel

Click on the icon "DISPLAY".

Click on SETTINGS tab.

Click on the button "ADVANCED".

Click on ADAPTER tab.

Change the Refresh Rate from Optimal to ADAPTER DEFAULT or 60Hz and click apply.

If you do not see REFRESH RATE under the ADAPTER tab, click on the MONITOR tab and be sure that the monitor type is set to:

*Desktop users:* Super VGA 1024x768 (or desired maximum resolution)

*Laptop users:* Laptop Display Panel 1024x768 (or equivalent for your system)

## **Q & A**

**Q:** How can I enhance the display quality?

**A:** You can usually decrease the TV contrast and increase brightness control to get the better picture.

**Q:** I connect using a NOTEBOOK PC, but no output is displayed on TV.

**A:** To get a converted image on the TV, you must configure the laptop computer to display an external VGA signal.

Typically, this is done by toggling the "Fn" key + "F1", "F2", etc. The actual function key varies with each computer.

Please refer to your computer's User's Manual for specific instructions for displaying an external VGA signal.

The "Fn" + "Fx" toggles between three settings. By default, the LCS panel is on. The first toggle attempts to power both the LCD panel and the external signal. Sometimes, laptops do not have enough power to show both the LCD and the Grand UltraView, so only a scrambled signal is viewable on the TV. The third toggle turn off the LCD panel and shows only the external display (the TV, in this case).

Q: I have an older model of a television. Would I be able to use my video converter with a television as old as this one?

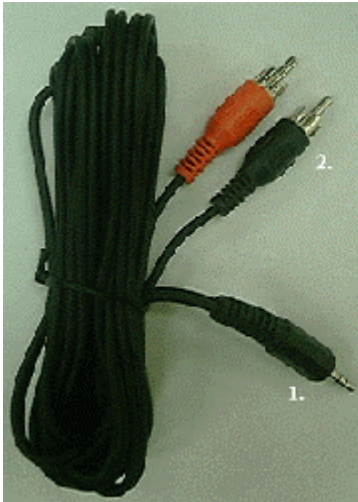
A: Yes, you may need a special adapter called an RF modulator. This device converts the composite video signal from your video converter to an Antenna signal, which can be viewed on your TV using Channel 3 or 4 or 13. You may also use a VCR in some cases. Refer to section D3 for more information.

Q: Can I use multiple televisions to view the same image from my computer?

A: Yes, Grand Ultimate 2000 provides 1 CVBS OUT, 1 S-VHS OUT and 1 RGB OUT. You may connect one television to the next using a composite video cable or an S-Video between the "VIDEO IN" and "VIDEO OUT" ports. We recommend using no more than five or six televisions.

**Q:** Why can't I hear audio coming through the Ultimate2000?

**A.** The Ultimate2000 is designed as a PC to Video converter and does not do anything with audio. However, transferring audio is relatively simple. You need a cable that connects between the audio output of your computer's sound card and the audio input of your TV. See figure E. Purchase online @ [www.Grandtec.com](http://www.Grandtec.com)



**E1. Connects into the Audio Output (or Speaker output) of your computer's soundcard.**

**E2. Connects into the Audio Input of your TV.**

**Note: This type of audio cable is available from most computer stores and also on this website via our StoreFront. (Model# ZZ-AUDIO)**



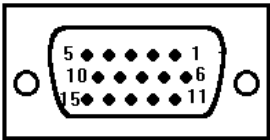
# CHAPTER 4

## Technical Specifications

### VGA IN/OUT connector

Analog RGB and SYNC signal from 15 pin VGA output port of PC or Notebook PC, and output RGB and SYNC signal to monitor.

Pin No.	Signal Description
1	Red out, 0.7Vpp ± 0.1Vpp, 75 ohms, to monitor
2	Green out, 0.7Vpp ± 0.1Vpp, 75 ohms, to monitor
3	Blue out, 0.7Vpp ± 0.1Vpp, 75 ohms, to monitor
4	DDC2B bus, SDA signal
5	Green in, 0.7Vpp ± 0.1Vpp, 75 ohms, from PC
6	Ground
7	Ground
8	Ground
9	Red in, 0.7Vpp ± 0.1Vpp, 75 ohms, from PC
10	Blue in, 0.7Vpp ± 0.1Vpp, 75 ohms, from PC
11	HSYNC in, TTL level, from PC
12	VSYNC in, TTL level, from PC
13	HSYNC out, buffered HSYNC in, to monitor
14	VSYNC out, buffered VSYNC in, to monitor
15	DDC2B bus, SCL signal

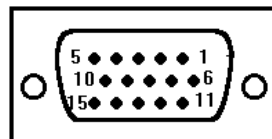


Note: Case is connected to the ground

## RGB/YUV OUT

**RGB/YUV OUT** is 15 pin D type female connector. It can output RGB and YUV component format signal. If PIN13 short with PIN 14, or turn on SWITCH 4, it enables RGB format output. If PIN 13 short with PIN 12, it enables YUV format output. RGB and YUV format cannot be enabled simultaneously.

Pin No.	Signal Description
1	Blue/V component output, 75 ohms
2	Green/Y component output, 75 ohms
3	Blue/U component output, 75 ohms
4	TV CSYNC, negative sync, 0.6Vpp
5	Ground
6	Ground
7	Ground
8	Ground
9	No connection
10	Ground
11	No connection
12	YUV enable, short with PIN13, enable YUV output
13	+5V
14	RGB enable, short with PIN 13, enable RGB output
15	TV CSYNC, negative sync, TTL level

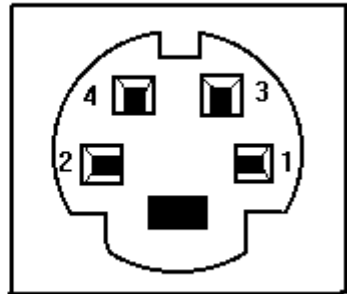


Note: Case is connected to ground

### **S-VIDEO connector**

S-VIDEO connector is a 4 pin mini-DIN connector.

Pin No.	Signal Description
1	GND
2	GND
3	Y ( Luminance ), 0.7 Vpp $\pm$ 0.2 Vpp, 75 $\Omega$ , negative sync
4	C ( Chrominance ), 0.3 Vpp $\pm$ 0.1 Vpp



### **VIDEO OUT connector**

Composite video out, 1.0Vpp  $\pm$  0.2Vpp 75 ohms, negative sync.

**Power Consumption : 5V, 500mA**

**Note: If you prefer to use an external wallmount power supply instead of the keyboard adapter, you MUST use the following type:**

**5V, between 400mA and 1000mA, with a center positive connector**

**or**

**@ [www.Grandtec.com](http://www.Grandtec.com)**

## **For additional technical support:**

On-Line – [www.Grandtec.com](http://www.Grandtec.com)

Email – [vision@dobbsstanford.com](mailto:vision@dobbsstanford.com)

Fax – 214-351-3862

Call – 214-956-0447

Telephone support is available M-F, 8:45 – 5:45 CST. Voice-mail is available during off hours or during busy peak times. Your call will be returned as soon as possible (usually within 24 hours).

A Return Authorization Number (RA#) is required before returning any products to the manufacturer for repair. No credits will be given at any time by the manufacturer. If you desire a credit for the return of your product, please contact the retailer from whom you originally purchased the product. Credits are subject to the policies of the individual retailer.

## **Warranty**

We warrant the Grand Ultimate 2000 shall, for a period of one year from the date of purchase, be free of any defect in material and workmanship and that it will perform in accordance with specifications. The sole obligation of this warranty shall be to either repair or replace at our expense the product, at manufacturer's option. The original sales receipt must be supplied for warranty repair.

There are no warranties except as stated. There are no warranties expressed or implied, including, but not limited to, the implied warranties of merchantability and of fitness for a particular purpose. In no event shall we be liable for consequential, incidental, or special damages, including, but not limited to, damages or loss of data, profits or goodwill.

Products that have been subject to abuse, misuse, vandalism, accident, alteration, neglect, unauthorized repair or improper installation will not be covered by warranty.